What is claimed is:

1. A method for manufacturing a heterojunction bipolar transistor, comprising steps of:

providing a substrate;

forming a first at least one semiconductor layer on said substrate;

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forming a second at least one semiconductor layer on said first at least one semiconductor layer; and

inserting a thermal treatment process within said second at least one semiconductor layer so as to improve a performance of said heterojuntion bipolar transistor.

- 2. The method according to claim 1, wherein said first at least one semiconductor layer comprises collector layers region, a base layer region.
- 3. The method according to claim 1, wherein said second at least one semiconductor layer comprises emitter layers region.
 - 4. The method according to claim 1, wherein said first and second at least one layers are made of a material selected from a group consisting of a GaAs, an AlGaAs, an InGaP, an InGaAs, an InP, and a combination of III-V compound semiconductor materials thereof.
- 5. The method according to claim 1, wherein said thermal treatment process is performed at a temperature ranged from 300 °C to 800 °C.
 - 6. A heterojunction bipolar device, comprising:
 - a substrate;
 - a first at least one semiconductor layer formed on said substrate; and
- a second at least one semiconductor layer formed on said first at least one

semiconductor layer,

wherein a stack includes said substrate, said first at least one semiconductor layer, and said second at least one semiconductor layer, and a thermal treatment process is subjected to be inserted within said second at least one semiconductor layer so as to improve a performance of said heterojunction bipolar device.

- 7. The device according to claim 6, wherein said first at least one semiconductor layer comprises collector layers region, and a base layer region.
- 8. The device according to claim 6, wherein said second at least one semiconductor layer comprises emitter layers region.
- one layers are made of a material selected from a group consisting of a GaAs, an AlGaAs, an InGaP, an InGaAs, an AlInP, an InGaAs, an InAlAs, an InP, and a combination of III-V compound semiconductor materials thereof.
- 10. The device according to claim 6, wherein said thermal treatment process is performed at a temperature ranged from 300 °C to 800 °C.